

CHAPTER XIII.—POWER GENERATION AND UTILIZATION IN CANADA*

CONSPECTUS

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Section 1.—Water Power

Canada's basic geological formations and their superimposed topographical features have resulted in a fresh-water area officially estimated at 228,307 square miles. This is larger than the fresh-water area of any other country and more than double that of the whole land area of Great Britain and Ireland. As all of this fresh-water area is above sea-level, and much of it at considerable altitudes, its outflow in its descent to the sea creates sources of potential energy at every rapid and fall along its course. By what may be regarded as a special dispensation of nature, more than half of this potential power occurs in that section of Canada comprising the Provinces of Ontario and Quebec, which is without commercial fuel deposits and in which is concentrated over 80 p.c. of the industrial development of the Dominion.

Since the turn of the present century, water power has been a dominant factor in the evolution of the Canadian economy. In 1900, Canada was predominantly an agricultural country and water power, with the advent of long-distance transmission of electricity, was just beginning to exert its influence in the development of large-scale industry. In the succeeding decades this influence grew rapidly fostering the economic utilization of the resources of land, mine and forest throughout the Dominion and bringing Canada to a position of first-rate importance among the manufacturing countries of the world. Water-power installation, which totalled only 173,000 h.p. in 1900, grew to 890,000 h.p. in 1910, to 2,470,000 h.p. in 1920, to 5,727,000 h.p. in 1930, to 8,289,000 h.p. in 1940, and at the beginning of 1946 had reached a total of 10,283,610 h.p. This total places Canada in a position second only to the United States in the development of water power and, on the commonly accepted basis of one horse-power being the equivalent of the work of ten men, furnishes energy equal to that of more than 100,000,000 workers.

* In this Chapter of the Year Book all information respecting power generation and utilization in Canada is co-ordinated; some sections, however, cannot be regarded as complete owing to the insufficiency of available data. Section 1 has been revised under the direction of V. Meek, Controller, Dominion Water and Power Bureau, Surveys and Engineering Branch, Department of Mines and Resources, and Sections 2, 3 and 4 (except as otherwise stated) by G. S. Wrong, B.Sc., Chief, Transportation and Public Utilities Branch, Dominion Bureau of Statistics.